CLAIMS

1. A logically partitioned data processing system, comprising:

a plurality of logical partitions;

a plurality of operating systems, each assigned to one of said plurality of logical partitions;

a plurality of memory locations, each location assigned to one of said plurality of logical partitions;

a data transmission bus;

at least one terminal bridge connected to said data transmission bus;

a plurality of input/output adapters, each associated with a different one of said plurality of logical partitions, said input/output adapters being connected to said terminal bridge; and

means for preventing transmission of data between a given one of said input/output adapters which is associated with a first one of the plurality of logical partitions, and memory locations unassigned to said first one of said plurality of logical partitions.

2. The logically partitioned data processing system of Claim 1 wherein said data transmission bus is a PCI bus, and further comprising:

a PCI host bridge connected to said PCI bus; and

an input/output bus connected to said PCI host bridge.

3. The logically partitioned data processing system of Claim 1 wherein said terminal bridge has a plurality of sets of range registers, each associated with a respective one of said input/output adapters.

1   4. The logically partitioned data processing system
2   of Claim 3 further comprising an arbiter which selects
3   one of said input/output adapters to use said data
4   transmission bus, wherein said transmission preventing
5   means assigns one of said sets of range registers based
6   on a grant signal from said arbiter.

1   5. The logically partitioned data processing system
2   of Claim 3 wherein said sets of range registers contain
3   direct memory access addresses which limit operations
4   that may be placed onto said data transmission bus by
5   said input/output adapters.

1   6. The logically partitioned data processing system
2   of Claim 3 wherein said sets of range registers are
3   programmable.

7. A method of preventing an operating system image
within a logically partitioned data processing system
from fetching or corrupting data from a memory location
allocated to another operating system image within the
data processing system, the method comprising the steps
of:

receiving a request from the operating system image
to access a given one of a plurality of input/output
adapters each associated with a different one of a
plurality of logical partitions of the data processing
system, wherein the input/output adapters are connected
to a single terminal bridge; and

accessing the given input/output adapter using
memory mapped to the operating system image.

8. The method of Claim 7 wherein said accessing step
includes the steps of:

transmitting the request to a PCI host bridge using
an input/output bus; and

conveying the request from the PCI host bridge to
the terminal bridge using a PCI bus.

9. The method of Claim 7 wherein said accessing step
utilizes one of a plurality of sets of range registers of
the terminal bridge, each associated with a respective
one of the input/output adapters.

10. The method of Claim 9 wherein said accessing
step further utilizes an arbiter which selects one of the
input/output adapters, to assign one of the sets of range
registers based on a grant signal from the arbiter.

11. The method of Claim 9 further comprising the
step of associating each of the sets of range registers

3   with direct memory access addresses which limit access by

4   the input/output adapters.

1   12. The method of Claim 9 further comprising the

2   step of programmably loading the sets of range registers.

1   13. A computer program product for use in a data

2   processing system for preventing an operating system

3   image within a logically partitioned data processing

4   system from fetching or corrupting data from a memory

5   location allocated to another operating system image

6   within the data processing system, the computer program

7   product comprising:

8   a storage medium; and

9   program instructions stored on said storage medium

10   for receiving a request from the operating system image

11   to access a given one of a plurality of input/output

12   adapters each associated with a different one of a

13   plurality of logical partitions of the data processing

14   system, wherein the input/output adapters are connected

15   to a single terminal bridge, and for accessing the given

16   input/output adapter using memory mapped to the operating

17   system image.

1   14. The computer program product of Claim 13 wherein

2   the request comprises an input/output adapter identity, a

3   memory address range to be mapped, and a direct memory

4   access range, and said program instructions further

5   determine that the identity of the input/output adapter,

6   the memory address range, and the direct memory access

7   range are allocated to the operating system image.

1   15. The computer program product of Claim 13 wherein

2   said program instructions access the input/output adapter

3   utilizing one of a plurality of sets of range registers

4   of the terminal bridge, each associated with a respective

5   one of the input/output adapters.

1   16. The computer program product of Claim 15 wherein
2   said program instructions further load the sets of range
3   registers.